

6 MAY 1994



Acquisition

**NUCLEAR WEAPONS PROGRAM
MANAGEMENT**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

NOTICE: This publication is available digitally on the SAF/AAD WWW site at: <http://afpubs.hq.af.mil>. If you lack access, contact your Publishing Distribution Office (PDO).

OPR: SAF/AQQS (Maj Karen Selva)
Supersedes AFR 80-6, 25 September 1975; AFR
80-9, 17 May 1976; and AFR 80-29,
11 January 1985.

Certified by: SAF/AQQ (Col Richard V. Reynolds)
Pages: 10
Distribution: F

This instruction implements AFPD 63-1, *Acquisition System*. It also implements Department of Defense (DoD) Directive 3150.1, *Joint Nuclear Weapons Development Studies and Engineering Projects*, December 27, 1983; DoD Instruction 5030.55, *Joint AEC-DoD Nuclear Weapons Development Procedures*, January 21, 1974, with Changes 1 and 2; MOU DE-GM04-67AL-02056, *Memorandum of Understanding Between the United States Department of Energy and the United States Air Force for the DOE-Air Force Joint Flight Test Program*; portions of DoD Directive 5000.1, *Defense Acquisition*, February 23, 1993; DoD Instruction 5000.2, *Defense Acquisition Management Policies and Procedures*, February 23, 1991; and DoD Instruction 5000.2/AF Sup 1. It outlines the procedures and responsibilities for managing the Air Force nuclear weapons program. It applies to Air Force personnel involved in the research, design, development, testing, acquisition, operation, maintenance, and modification of nuclear weapons and their related systems and subsystems. In cases of conflict with DoD directives or instructions, DoD documents prevail.

SUMMARY OF REVISIONS

This is the initial publication of AFI 63-103, substantially revising AFR 80-6; AFR 80-9; and AFR 80-29. It integrates guidance for managing nuclear weapon systems.

1. Process Overview:

1.1. Nuclear Weapon Development and Acquisition. The Air Force acquires nuclear weapons from the Department of Energy (DOE) and develops nuclear weapon systems using a special process which is fully explained in references A and B. DOE designs, develops, and acquires nuclear weapons for DoD. The DOE and DoD co-manage nuclear weapons through all system life-cycle phases. Assurance to the users and the weapon system program executive officers (PEO) that all requirements have been met are provided by both the DOE and DoD. For Intercontinental Ballistic Missile (ICBM)

systems, the DOE issues a Major Assembly Release (MAR) and the Air Force releases Nuclear System Safety Rules. Nuclear safety rules, approved by the Secretary of Defense, spell out for the Air Force exactly how the weapon and delivery system may be stored, exercised, transported or used. For aircraft systems, the DOE may use an Aircraft Compatibility Control Drawing (ACCD) in place of a MAR. The Air Force releases Nuclear System Safety Rules, a nuclear compatibility certification statement from the Air Force Materiel Command Nuclear Integration Engineering Office, and a statement of certification completion from the weapon system program manager (WSPM) to the Air Force Seek Eagle Office.

1.2. Nuclear Weapon Requirements. The Air Force uses studies to establish requirements for new nuclear weapons or modifications to an existing weapon to meet new operational needs. Any DoD component or DOE may conduct an independent or joint nuclear weapons study. See Section 4 for procedures on the acquisition phases and studies.

1.2.1. A Weapon Concept (Phase 1) Study evaluates the military usefulness of a proposed weapon system/nuclear weapon combination.

1.2.2. A Joint Feasibility (Phase 2) Study details nuclear weapon information from which you can select a weapon design.

1.2.3. A Joint Design Definition and Cost Study (Phase 2A) provides cost and production schedule information for selecting options prior to entering system development. Entry into Phase 2A corresponds to Milestone I in the DoD Acquisition Process.

1.3. Nuclear Weapon Production and Retirement. Components forward the results of their Phase 1, 2 and 2A studies to the Nuclear Weapons Council (NWC). The NWC decides to develop proposed nuclear weapons and forwards a Phase 3 request to DOE. Phase 3, Development Engineering, corresponds to DoD Milestone II. Phases 4 and 5 include Production Engineering and First Production of a nuclear weapon. Phase 6, Quantity Production, provides the number of weapons needed to support the stockpile. Phase 7 deals with Retirement of the nuclear warhead.

2. Headquarters, US Air Force Process:

2.1. Secretary of the Air Force (SAF):

2.1.1. SAF/AQ. The Assistant Secretary of the Air Force for Acquisition oversees policy and implements nuclear weapon acquisition programs throughout the Air Force.

2.1.2. SAF/AQQ. The Directorate of Long Range Power Projection, special operations forces (SOF), Airlift and Training, coordinates between the military departments and Air Force organizations that acquire and maintain nuclear weapons and sets up any formal project development agreements with other Services for joint projects. SAF/AQQ reviews and approves DoD/DOE studies examining new weapon concepts and requirements and requests initiation of Phase 3, Development Engineering, in accordance with DoD Instruction 5030.55. SAF/AQQ concludes formal joint agreements with the DOE for dividing responsibilities on any approved Phase 3 development projects. SAF/AQQ coordinates, approves and forwards draft nuclear warhead Military Characteristics (MC), Stockpile-to-Target Sequences (STS) and nuclear warhead Design Review and Acceptance Group (DRAAG) proceedings to the Nuclear Weapons Council Standing Committee (NWCSC) for approval.

2.1.3. SAF/AQQS:

2.1.3.1. Represents the day-to-day interests of the Air Force for nuclear weapons development and acquisition and related matters.

2.1.3.2. Prepares the annual program management directive (PMD) that assigns Air Force responsibilities for managing nuclear weapon programs. SAF/AQQS uses the PMD to direct Air Force support for:

- Nuclear Weapon Development and Support.
- Nuclear Weapon Systems Integration.
- Nuclear Project Officer Groups.
- Nuclear Technology Programs.
- Nuclear Surety and Assessments.

2.2. Air Staff:

2.2.1. Headquarters United States Air Force Deputy Chief of Staff for Plans and Operations (HQ USAF/XO):

2.2.1.1. Headquarters US Air Force Directorate of Forces (HQ USAF/XOF). Prepares or monitors operational initiatives, strategies, concepts of operation, test and evaluation, and procedures for the employment of weapon and force multiplier systems. The office maintains nuclear force structure, builds current and future Air Force stockpile requirements and represents Operations in the day-to-day nuclear management process.

2.2.1.2. Headquarters US Air Force Directorate of Operational Requirements (HQ USAF/XOR). Reviews, evaluates, and manages mission needs and operational requirements for operating commands that may result in nuclear weapon research, development, test and evaluation (RDT&E) procurement appropriations.

2.2.1.3. Headquarters US Air Force Office of National Security Negotiations (HQ USAF/XOXI). Evaluates proposed nuclear weapon concepts for compliance with existing arms control agreements or with arms control agreements under negotiation and provides HQ USAF/XOR and SAF/AQQ with a copy of each evaluation. HQ USAF/XOXI coordinates with SAF/AQQS concerning the viability of a proposed nuclear weapon and the arms control process before any request for Phase 3 authorization is forwarded through SAF/AQQ to the NWC. HQ USAF/XOXI coordinates with HQ USAF/XOR and SAF/AQQ on all proposed policy initiatives related to nuclear weapon limitations.

2.2.2. Headquarters US Air Force Deputy Chief of Staff for Logistics (HQ USAF/LG).

Establishes maintenance policy, procedures, and programs to maintain the design characteristics of nuclear weapon subsystems (NWSS) and their delivery systems.

2.2.3. Air Force Chief of Safety (HQ USAF/SE). Oversees the nuclear weapon surety program, including nuclear safety certification, and provides safety policies that affect weapon safety. The Air Force Safety Agency, a field operating agency of HQ USAF/SE, manages the USAF Nuclear Weapon System Safety Group (NWSSG).

2.2.4. Air Force Chief of Security Police (HQ USAF/SP). Participates in USAF NWSSG studies per AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and*

Safety Rules (formerly AFR 122-2). HQ USAF/SP also provides physical security policies affecting the custody and control of Air Force nuclear weapons.

3. Field Commands Process:

3.1. Air Force Materiel Command (AFMC):

3.1.1. Supports and coordinates with other Service agencies on joint service nuclear warhead programs and provides field coordination as necessary on other Service programs.

3.1.2. Conducts all Phase 1, Phase 2 and Phase 2A studies and forwards to SAF/AQQS for review and approval. AFMC coordinates and forwards the STS and MCs through SAF/AQQS to the NWCSC.

3.1.3. Provides the Lead Project Officer (LPO) for DoD/DOE nuclear weapon development Project Officers Groups (POG) for each program where the Air Force is the lead agency. AFMC also provides the chairperson or project officer to all other nuclear weapon-related POGs (e.g. Warhead POG, Weapon System POG, Use Control POG).

3.1.4. Provides the principal USAF member in all DRAAG meetings. When the Air Force is the designated cognizant service for the nuclear weapon, AFMC chairs DRAAG meetings and reports findings in accordance with DoD Instruction 5030.55.

3.1.5. Designs, develops, and produces Air Force components of a nuclear weapon, as specified in the joint USAF/DOE/other service agreements and the weapon's Coordinated Project Summary.

3.1.6. Develops and coordinates the Comprehensive Test Plan with DOE for all NWSS entering Phase 3.

3.1.7. Establishes a Joint Test Working Group (JTWG) during Phase 3 to conduct joint flight tests (JFT) of DOE-developed joint test assemblies (JTA). Co-chairs the JTWG with DOE. AFMC acquires sufficient JTAs to conduct tests of NWSS. AFMC consults with SAF/AQQS and HQ USAF/XOFS for general policy guidance on each proposed nuclear weapon and nuclear weapon subsystem test plan before implementation. The JFT program includes new material flight tests and stockpile flight tests to verify that NWSS function in a variety of STS environments and demonstrate continuing compatibility between DOE and Air Force subsystems.

3.1.7.1. Manages and conducts NWSS tests required by the JFT program, including arranging for test sample transportation and security.

3.1.7.2. Authenticates DOE certificates of work for each JTA to certify that the test sample is incapable of producing a nuclear yield.

3.1.8. Ensures the acceptability (standardization) of the nuclear weapon under consideration by closely monitoring warhead development, and evaluates the design for suitability and compliance with MCs and STSs.

3.2. Air Mobility Command (AMC). AMC helps AFMC maintain and update nuclear cargo aircraft tiedown techniques, manuals, and training. AMC provides cargo aircraft to support nuclear weapon cargo loading, tiedown, and loading technical order validation and verification tests. It supports airlift requirements for nuclear support equipment, nuclear test items and instrumentation for development, compatibility, and certification testing.

3.3. Major Commands (MAJCOM). MAJCOMs identify operational requirements for nuclear weapons to HQ USAF/XOR and SAF/AQQ. They provide operational concepts and constraints for Phase 1 studies and the STS and help AFMC compile target information. They participate in Phase 2 studies and joint DoD/DOE nuclear weapon development projects through their designated Project Officers, as requested by AFMC. They coordinate on Phase 1 and Phase 2 studies, MCs and STS, and help AFMC evaluate warhead design and suitability. MAJCOMs support JFT programs and provide a representative to JTWGs to help the chairperson optimize pretest planning and coordination. MAJCOMs also participate in nuclear weapon system POGs and actively support all activities to achieve and maintain weapon system nuclear certification, including support for compatibility ground and flight testing and verification and updating of all necessary nuclear weapons and weapon system manuals.

4. Study and Acquisition Process:

4.1. SAF/AQQS:

4.1.1. Directs AFMC to perform all Phase 1, 2 and 2A studies. SAF/AQQS directs Phase 1 studies in response to internal Air Staff requirements or MAJCOM requests.

4.1.1.1. Reviews and approves all Phase 1 studies from AFMC and authorizes AFMC to release approved data to the Phase 2 study participants.

4.1.1.2. Requests approval from the NWCSC to conduct joint Phase 2 studies between DoD and DOE.

4.1.1.3. After reviewing the Phase 2 study results, SAF/AQQS may either request to reopen the Phase 2 study, initiate a Phase 2A study to obtain cost information, or request initiation of a Phase 3 development program. SAF/AQQS bases requests to reopen Phase 2 studies on continued or renewed interest in the weapon concept, or on technological advances where studies did not establish initial feasibility.

4.1.1.4. SAF/AQQS coordinates the AFMC recommendation for Phase 3 initiation and sends it through SAF/AQQ to the NWCSC for approval. SAF/AQQS consults with HQ USAF/XOXI to get preliminary judgment on the nuclear weapon system and whether the system complies with existing or anticipated arms control agreements before requesting Phase 3 approval.

4.1.2. SAF/AQQS coordinates and forwards these items (**Table 1.**) to SAF/AQQ for review and approval before to sending them to the NWCSC:

Table 1. Phase Products.

Item	DOE Phase
Study Results	Phase 1, 2, 2A
Preliminary MCs and STS	Phase 1
Request for Phase 2 Study	Phase 2
Preliminary Draft MCs and STS	Phase 2
Draft MCs and STS	Phase 2A
Request to enter Phase 3	Phase 3
Final MCs and STS	Phase 3
DRAAG Reports	Phases 3 through 5

4.2. AFMC:

4.2.1. Appoints the study director for Phase 1, Phase 2 and Phase 2A studies. AFMC coordinates Phase 1 studies with MAJCOMs and forwards these studies for review and approval by SAF/AQQS. AFMC provides logistics and maintenance inputs for Phase 1, 2 and 2A studies and STSs. AFMC may conduct preliminary Phase 1 studies of new concepts or proposed new applications without specific SAF/AQQS approval.

4.2.2. When Phase 2 and 2A studies are complete, may recommend that SAF/AQQS request initiation of Phase 3, Development Engineering. AFMC accompanies the recommendation with a draft letter to the Secretary of Defense that includes all supporting documentation as prescribed in DOD Instruction 5030.55. When more than one Service shares responsibility for project development, AFMC prepares a proposed joint agreement for dividing responsibilities between the Air Force and the other Service(s). AFMC forwards the proposed agreement through SAF/AQQS to SAF/AQQ for approval and coordination.

4.2.3. After obtaining Phase 2A authorization (when the Air Force is the cognizant service), AFMC appoints a

Lead Project Officer to organize and chair the Project

Officers Group (POG). The POG provides formal liaison between the Air Force and DOE functions throughout the stockpile life of the nuclear weapon system.

4.2.4. After obtaining Phase 3 authorization, AFMC, through the POG:

4.2.4.1. Reviews the proposed joint agreement for service responsibilities, if required. The POG drafts and coordinates a separate formal joint agreement dividing responsibilities between the Air Force and DOE as well as other military departments, if necessary, and forwards the agreement to SAF/AQQ for approval.

4.2.4.2. Prepares, coordinates and forwards the final MCs to SAF/AQQS for approval by the NWCSC and publishing by the Defense Nuclear Agency.

4.2.4.3. Prepares and coordinates the final STS and forwards to SAF/AQQS for approval by NWCSC. Publishes the final STS after approval.

4.2.4.4. Establishes the JTWG and prepares, coordinates and publishes the Nuclear Weapons

Joint Flight Test Program (Reference E).

4.2.5. After Phase 3, the POG prepares, coordinates and forwards to SAF/AQQS any requested necessary change or deviation from the approved MCs.

RICHARD E. HAWLEY, Lt General, USAF
Principal Deputy Assistant Secretary of the
Air Force for Acquisition

Attachment 1

GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

References

DoD Directive 3150.1, *Joint Nuclear Weapons Development Studies and Engineering Studies*, December 27, 1983

DoD Instruction 5030.55, *Joint AEC — DoD Nuclear Weapons Development Procedures*, January 21, 1974

AFI 63-104, *Aircraft Stores Certification Program (Seek Eagle)*

AFI 91-102, Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules, (Formerly AFR 122-2)

MOU DE-GM04-67AL-02056, *Memorandum of Understanding between the United States Department of Energy and the United States Air Force for the DOE-Air Force Joint Flight Test Program*, September 16, 1982, (Copies available from SAF/AQQS).

DoD Directive 5105.31, *Defense Nuclear Agency*, January 24, 1991

Abbreviations and Acronyms

ACCD—Aircraft Compatibility Control Drawing

AMAC—Aircraft Monitor and Control

DRAAG—Design Review and Acceptance Group

ICBM—Intercontinental Ballistic Missile

JFT—Joint Flight Test

JTA—Joint Test Assembly

JTWG—Joint Test Working Group

LPO—Lead Project Officer

MAR—Major Assembly Release

MCs—Military Characteristics

NWC—Nuclear Weapons Council

NWCSC—Nuclear Weapons Council Standing Committee

NWSS—Nuclear Weapon Subsystems

NWSSG—Nuclear Weapon System Safety Group

PMD—Program Management Directive

POG—Project Officer Group

SOF—Special Operations Forces

STS—Stockpile-to-Target Sequence

Terms

Cognizant Service or Department—The Military Service designated to lead each development project for DoD.

Comprehensive Test Plan (CTP)—A joint DoD/DOE document describing post-development testing of the nuclear weapon subsystem throughout its life-cycle. It identifies DoD and DOE responsibilities for integrating, coordinating, and implementing such testing.

Comprehensive Test Plan Group (CTPG)—A joint DoD/DOE group established at the beginning of Phase 3 (Development Engineering). The CTPG develops the CTP for a particular NWSS. Membership usually consists of the cognizant military department weapon development agencies, Defense Nuclear Agency (DNA), DOE and other selected agencies.

Coordinated Project Summary (CPS)—A coordinating document prepared early in Phase 3 of a nuclear weapon development project by the Project Officers. This summary will highlight significant project milestones, information requirements, and decision points. It will outline the interfaces and agreements between DOE and DoD development and production programs, provide a means to follow DoD and DOE progress, and give visibility to issues requiring prompt resolution. The CPS should be brief and concise to aid easy project review and should use graphical representations where possible. The CPS will be amended and republished as necessary to reflect development/production/deployment changes in planning. The CPS is prepared by the Lead Project Officer with inputs from the various member organizations.

Design Review and Acceptance Group (DRAAG)—A joint service group, independent of the POG, that reviews preliminary, interim and final DOE-proposed nuclear warhead designs for compliance with the requirements specified by the STS and the MCs. The chairman of the DRAAG, appointed by the cognizant service, issues a formal report of the acceptability of the weapon design to the Nuclear Weapons Council (NWC) which transmits the report to DOE.

Joint Test Assembly (JTA)—A configuration developed by DOE for use in the Joint Flight Test (JFT) program. It includes the Joint Test Subassembly and DOE war reserve nuclear weapon components. The physical appearance and characteristics of a JTA approximate a war reserve configuration as much as possible without the capability to produce a nuclear yield.

Joint Test Working Group (JTWG)—A group of DOE and DoD representatives who technically plan and coordinate implementing the JFT program for a specific DOE weapon and DoD carrier system.

Military Characteristics (MC)—The Military Characteristics define the DoD requirements for a specific nuclear weapon/warhead. They describe required weapon yields and fuzing options, warhead operational, physical, functional, environmental, vulnerability, safety and reliability parameters; describe maintenance, monitoring, storage and handling considerations; and set forth the priority of design compliance in the event of conflicting design requirements.

New Material Flight Test—Joint Air Force and DOE flight tests conducted during the production period using weapon systems randomly selected from new production.

Nuclear Weapons Development Project Officers—Persons assigned to coordinate the development of nuclear weapons to ensure that compatibility across the DoD/DOE weapon interface is maintained throughout the stockpile life of the weapon.

Nuclear Weapon Subsystems (NWSS)—DOE components and those DoD interface components of a

NWSS, as defined by the CTPG, which must work together to produce the desired nuclear yield.

Nuclear Weapon System Safety Group (NWSSG)—The Air Force NWSSG conducts nuclear weapon system safety studies and operational safety reviews to evaluate Air Force nuclear weapon systems and to ensure the DoD Nuclear Weapon System Safety Standards are met in weapon system design and operations. The NWSSG does not certify nuclear weapon system hardware, software, or procedures.

Project Officer Group (POG)—The organizational structure within which project officers coordinate nuclear weapons and weapon systems development. It is the primary point of contact between the DOE and DoD for the stockpile life of the weapon and weapon system.

Project Officer Meeting (POM)—A meeting of project officers to coordinate nuclear weapons projects. Representatives from other organizations with an interest in the project may attend to provide technical assistance and support.

Stockpile Flight Test—Joint Air Force and DOE flight tests using nuclear weapon subsystems randomly selected from the stockpile.

Stockpile-to-Target Sequence (STS)—A document that defines the logistical and employment concepts and related physical and nuclear environments, including vulnerability criteria, involved in the delivery of a nuclear weapon from the stockpile to the target. It may also define the logistical flow involved in moving nuclear weapons to and from the stockpile for quality assurance testing, modification and retrofit, and the recycling of limited life components.

War Reserve—Nuclear weapon and nuclear weapon material which meets design specifications, and which has been entered, or will be entered, into the operational stockpile.